

Remarks

Applicant and their undersigned attorney have carefully considered the Office Action of April 21, 2008 in the above-identified case, together with the prior art references cited and relied on by the Examiner in the rejections of the claims. In response, Applicant attaches herewith the supplemental Declaration of William J. Colucci in support of the patentability of the subject application. Applicant submits that the present invention is not anticipated by, and is not obvious in light of, the cited prior art. Reconsideration of the application and allowance of the claims is respectfully requested.

The previously amended claims are directed to a method of operating a direct injection gasoline (DIG) engine with a novel fuel composition. Applicant maintains, as supported by the earlier filed Declaration and attached supplemental Declaration, that a fuel composition including the claimed ratio of a Mannich base detergent and a succinimide compound provides a significant, unexpected, and surprising performance benefit in DIG engines. The claimed ratio is critical.

The present Office Action reinstates the previous rejection of claims 3, 7, 10-14, 17 and 23 under 35 U.S.C. 103(a) in light of MacDuff (U.S. Pat. No. 6,458,175). Claims 4 is again rejected under the same statute in light MacDuff in view of Udelhofen (U.S. Pat. No. 4,231,759).

In response to these earlier rejections, the Applicant filed amendments, arguments, and the Declaration of Mr. Colucci in support of the arguments. These rejections were withdrawn based on the amendments to the claims and the applicant's

arguments (see Office Action of July 26, 2007). Applicant contends that the results of the subject invention are *per se* surprising and, therefore, non-obvious. Mr. Colucci's prior-filed Declaration further established this point. However, the evidentiary support of the Colucci Declaration has been reconsidered in the latest Office Action. The Declaration is now thought to not constitute evidence of unexpected results.

Applicant resubmits that IVD-reducing additives do not necessarily operate in a DIG engine and one of skill in the art would have no expectation that an IVD-reducing additive would work as needed in a DIG engine. Moreover, Macduff does not teach a fuel composition "used in the same environment as the fuel composition of the present invention." A skilled artisan having Macduff before them would not recognize that the composition may be used to remove injector deposits. Therefore, Applicant submits that the obviousness-type rejection is traversed for at least this reason.

Moreover, Applicant is proceeding contrary to conventional wisdom. "Proceeding contrary to accepted wisdom in the art is evidence of nonobviousness." MPEP 2145(X)(D)(3). It is conventional wisdom that a higher treat rate of a succinimide compound reduces conventional engine deposits. Here, it is found that a higher treat rate reduced flow loss (which is different than intake valve deposits in conventional engines) in a DIG engine, as confirmed by the specification. By conventional wisdom, a yet higher treat rate would further reduce flow loss. Applicant is proceeding directly opposite to conventional wisdom by reducing the treat rate of a succinimide to a trace amount relative to the Mannich detergent. Applicant submits that this evidence of nonobviousness traverses the rejection under 35 USC 103(a) independent of, or in combination with, the Declarations provided by Mr. Colucci.

Turning now to the new remarks of the subject Action, the prior-filed Declaration is entirely discounted because it is deemed to not constitute unexpected results. First, the evidentiary showing in the Declaration is said to be incommensurate with the scope of claims. According to the Action, the data presents a Mannich base detergent limited to a cresol Mannich base. The previous independent claim was silent with respect to the alkyl substituted group of the cresol (see claim 4). Claim 23 is open to any type of Mannich base. The succinimide of the data is limited to those formed from dimethylaminopropylamine and TETA polyamine wherein the succinimide:polyamine ratio is 1:1 and 1:0.5, respectively. The claims do not recite such limitations. As such, the Action states that it cannot be ascertained from the data if in fact the results are unexpected.

The data in the Declaration is a reorganization of the data provided by the specification at Table 4. While the specification and Mr. Colucci's comments stand alone in illustrating the surprising results provided by the subject claims, it is well established that a showing of unexpected results for a single member of a claimed group or a narrow portion of a claimed range is sufficient to rebut an allegation of obviousness where a skilled artisan can reasonably extend the probative value thereof. In re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Mr. Colucci has concluded that the data in the specification, as highlighted by the prior filed Declaration, illustrates that a succinimide alone, a Mannich alone, and a Mannich/succinimide additive are not significantly effective at reducing flow loss in a DIG engine. While increasing a succinimide treat rate alone improves flow loss results,

it was surprising to find that a trace amount of succinimide relative to the Mannich substantially improved flow loss results.

The data does not need to establish the results for every Mannich or every succinimide. The evidentiary proof would be too burdensome to achieve. Mr. Colucci, as a skilled artisan, is permitted to rebut an allegation of obviousness by providing evidence for one member of a claimed group so long as he can reasonably extend the probative value of the test result to the larger group, as he has done. Mr. Colucci's concurrently filed supplemental Declaration further establishes that the test data provides a basis for the subject claims.

One of the Applicant's positions is that not all conventional fuel detergents would necessarily work in a DIG engine. The Action alleges that routine experimentation could determine which additives might work. First, as stated above, there would be no expectation to one of ordinary skill in the art that any IVD-reducing additive would necessarily have a positive effect in a DIG engine. Therefore, no routine experimentation would be conducted in the first place to determine their suitability. There is no indication in the cited prior art or Office Action that would lead one to conduct such experimentation.

In any event, a *prima facie* rejection based on routine experimentation is fitting where the claimed ranges overlap or lie inside ranges disclosed by the prior art. In such cases, it is considered *prima facie* obvious to optimize the conditions of the prior art to arrive at an optimized range. However, the Office Action does not establish a disclosed ratio for the subject additives in a DIG engine. The Office Action does then not show that the subject claimed range is within, or overlaps with, a range disclosed in the prior

art. The Office Action does not allege or show that the claimed ratio is “close” to a disclosed ratio of the subject additives in a DIG engine. There are no legal citations or support in the Action to support the idea that Applicants research was routine experimentation. Therefore, the rejection predicated on routine experimentation is not established, does not have any support in the MPEP or law, and Applicant submits it is accordingly traversed.

Even if a claimed ratio did fall within the teaching of prior art reference for the same composition in a DIG engine, the allegation of obviousness is rebutted by such evidence indicating the claimed ratio is critical. As the specification data and prior Declaration also supported, the claimed ratio or concentration of components is critical to the claimed method. It is the relatively trace amount of succinimide relative to the Mannich additive that provides the surprising and unexpected results.

“The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims.” MPEP 2144.05 III. In In re Waymouth, the court held that an unexpected result for a claimed range, relative to a disclosed range in the prior art, has been established by a demonstration of a marked improvement over the results achieved under other ratios. See 499 F.2d 1273, 1276. Here, there is no overlapping or “close” disclosed range for the subject composition in DIG engines. Even if there were, Applicant claimed ratio is critical and provides an unexpected benefit. On both counts, an obviousness-type rejection is traversed. Reconsideration is respectfully requested.

Mr. Colucci's prior Declaration established both the unexpected results of the subject application, as he is allowed to extend the probative value of test data, and the criticality of the claimed ratio. Therefore, the allegation of obviousness is rebutted for at least these reasons. Applicant also submits herewith the supplemental Declaration of Mr. Colucci. In addition to incorporating the comments of the prior-filed Declaration, the supplemental Declaration establishes that the present invention proceeds contrary to conventional wisdom. The supplemental Declaration also further attests to the criticality of the claimed ratio. The allegation of obviousness is rebutted on any one of these points or upon some combination thereof.

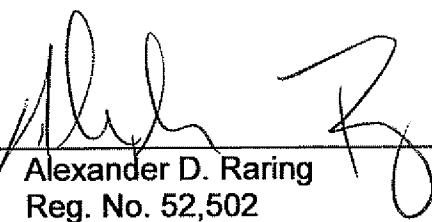
Applicant has provided new claims for consideration. For at least one of the reasons stated above, Applicant submits the new claims are also in a condition for allowance.

In summary, neither reference teaches or suggests the claimed, critical ratio range of the subject application as solely taught and claimed in the subject application either alone or in combination. Macduff does not teach or suggest a fuel composition for use in a DIG engine. Only Applicant's teaching recognizes the critical ratio. It was not recognized that reducing a succinimide relative to a Mannich detergent improved DIG engine performance. Reducing the succinimide, in fact, proceeds contrary to conventional wisdom. For at least one of the above or other reasons, reconsideration of the rejections is respectfully requested.

Applicant submits herewith the payment for a one-month extension of time in which to reply. The commissioner is hereby authorized to charge any deficiencies in fees or credit any overpayment associated with this communication to Deposit Account No. 50-2127.

Respectfully submitted,

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